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# USSR Report

ENERGY

No. 37

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## ELECTRIC POWER

### PROBLEMS IN GES CONSTRUCTION

Moscow IZVESTIYA in Russian 14 Aug 80 p 2

[Article by A. Shokhin construction chief, Zeyskaya GES: 'Finds and Losses: Certain Problems in Large-Scale GES Construction']

[Text] The Zeyskaya GES, the vanguard of hydroelectric power engineering in the Far East, was put into operation ahead of schedule at full capacity--1,290,000 kilowatts. L.I. Brezhnev congratulated all who took part in building the station on the occasion of this success. The resolution of the 25th Congress of the CPSU concerning the completion of this important construction project on the Zeya River has been carried out. The triumphant yet sad time has come for saying goodbye. We already know the address of the next construction project, the Bureyskaya GES--which is even grander and more important for the country; a new power-engineering complex will be formed around it. Two or three dozen wooden houses are rising at the Talakan line of direction, the settlement of the builders of this hydroelectric complex.

The researchers of the Leningradskiy gosplan are proceeding to work on yet another Bureya line of direction. Its name is Daldykan. There, parallel with the Bureyskaya, the dam of the Nizhnebureyskaya GES is rising. Thus, the Amurskaya Oblast will become the power-engineering heart of the entire Far East--a precipitously growing economic region.

It would seem that a natural process is occurring: operations have wound up on one project, and they are beginning at another; one construction project is passing on the relay baton to another. Passing it on? Unfortunately, this is essentially untrue. Strictly speaking, there is still no plan for the Bureyskaya giant. With regard to many positions, the planners have not found any understanding or support among us builders. It is not too hard, for example, to demonstrate that under the climatic conditions of the Far North it is not feasible to build a fill dam with an alluvial core. We have also had to defend another position: the planners decided to erect the GES powerhouse directly behind the dam in the river bed. There were certain reasons for that, but they are insignificant as compared with the savings in time which could be made using the new technology of concrete placement.

Moreover, these are not the only obstacles on the path to the Bureya, because of which the project may be delayed for many years. If the planning of the hydroelectric power station were competitive, such a delay would not occur. Because the plan which is now being presented to us is not the best solution from a technical and engineering point of view. From the sidelines the disputes between the builders and the planners may be viewed as a defense of the honor of the uniform. But why, indeed, "fight"? We are both presented with one problem to solve: to develop hydroelectric power-engineering together and, moreover, at an accelerated pace! But it is not turning out that way....

The builders of hydroelectric power stations, as is well known, are restless people. And it is not surprising that many of them want to go in the first bunch, even though they would have to move from the well-established Zeya to the uncomfortable taiga of the Talakan. Thousands of people took part in the competition for this right; during the days of the work of the 25th Congress of the CPSU it was headed up by the experienced builder V. Zakharchenko. Now this has already become history--four years have passed since then. But Talakan's prospects are still dim. There is a small settlement but no main, solid base for construction. A strange trend may be observed: the first unit of the Zeyskaya GES was started up in the 11th year, at Sayano-Shushenskaya--in the 15th year, at Nizhne-Kamskaya--in the 19th year. Four years have already been lost for the Bureyskaya GES....

We spent almost 16 years building the special-purpose power-engineering giant on the Zeya. Here for the first time a mass-contraforce dam was erected, which enabled us to sharply cut back on the expenditure of concrete. And heavy-duty, diagonal-type turbines were installed for the first time in the world. This allowed us to produce industrial electric power without waiting for the reservoir to fill up to the planned level, a period of four years. By the time this electric power station was turned over to the state commission, it had already fully paid back the expenditures required to erect it. It would seem that everything has turned out quite well, and still it took 16 years to build--a long time. A very long time! Five or six years could have been saved, especially because of the unjustifiably drawn-out preparatory period. Here, for example, is a lesson to be drawn from the Zeya: it took eight years after the arrival of the builders here before they could proceed to block off the river. Tens of millions of rubles were saved in the construction of the Zeyskaya GES, but even more savings could have been made, if we had finished not in 16 but in 11 or 12 years.

Perhaps it would not have been worthwhile to stir up these old irritations, if the same thing were not being repeated now at the Bureya. Let's take, say, the problem of personnel. As the volume of operations was winding down at the Zeya, the specialists which had passed through its school should have been transferred to the Bureya. However, this did not happen.



Very often my fellow-workers come to me and say in a guilty manner, "Well, you know, it's a personal matter, I intended to go there but there's just no possibility to get a job at Talakan." And for them this Talakan is like a guiding star in the desert. But I can't help them in any way. So our group has been cut practically in half. Thousands and thousands of builders trained by us have left for other projects. They leave because they want to work where they feel themselves to be truly needed--at hydro-electric power station construction projects. So how could we avoid letting them go....

It was not simple to form the group of Amur builders. It began basically with young people who had nothing but a great desire to build. The training-production combine which we immediately created graduated 14,000 people. They discovered 61 occupations. Thanks to the evening power-engineering construction technicum which was opened in Zeya, the number of unskilled workers among the engineering and technical employees was reduced by one-fifth. Need I mention that an intelligent middle link is the pledge of success in construction? And here these people are now leaving us. We cannot condemn them nor certainly delay them. They complain that we have not been able to guarantee them work according to their strength and capabilities.

What does it mean to lose a specialist? On an average it costs 10,000 rubles to create a master of his occupation along with bringing him here and securing him. If we multiply these lost thousands by the thousands of persons departing, we receive unplanned financial losses amounting to tens of millions of rubles.

Not everything can be calculated in rubles. There will come a time when the construction project on the Bureya will become widely renowned. People will come here with or without invitations, and we...we will not be ready to receive them: a palace romance, this, of course, is not for the North. What an irritating strange thing it must be to consider the ministry's position, when in our settlement plans allow for nine square meters of living space per person, but only six for a builder. Nevertheless, a builder is an ordinary person--a family man and solid. We need to prepare suitable facilities for his reception, so that when he has arrived, he can work on building the GES, without having to bother about his own facilities. Otherwise we are losing not only millions of rubles but also pace.

The construction project at Bureya is intended to be experimental and high-speed. If at Zeya the concrete was delivered to the dam in dump-trucks and was placed into its body in small batches, at Bureya it will be prepared on-site and layed in gigantic blocks. This process itself is almost completely automated. Labor productivity will be sharply increased. It is already time for the network power engineers to be thinking about building the LEP (electric-power transmission line). Too early? No. An analogous delay recently led to a situation whereby for almost two years units at the Zeya were operating without the load that they should have been carrying.

The 10th Five-Year Plan is coming to an end. The country is preparing to enter into the 11th without a pause and without losses. Experienced in the difficult conditions of the Far East, the group of the Zeya builders will do everything possible to solve new problems in regard to the growth of the country's power-engineering potential and to celebrate in a worthy manner the 26th Congress of the CPSU. The detachment which has already shifted its location to the Bureyskaya section will also strive to work in an accelerated rhythm. It is irritating that we have still not managed to get going as much as we could have. So what conclusion may we draw from everything said above concerning plans, personnel, and settlements? What ought to be the continuity of traditions of special-purpose power-engineering construction projects?

Within the system of building hydroelectric power stations there has been a violation of the organizational principle of transfers, in other words, of passing the baton in a relay race. The specialists are coming to know many sad lessons, and they are all quite expensive for the country.

Extending the time periods for building hydroelectric power stations is not always caused by objective factors but often the result of unsatisfactory financing. It should not take decades to build a GES but much less. We should not always blame the builders for their enforced slowness--we must aid them in their attempts to build rapidly and just as rapidly to receive a return on the rubles which have been invested in the project. The preparatory period is being stretched out much too long.

There are many large-scale construction projects in the country, and each one has its own lesson to teach. However, we have not mastered the lesson of Bratsk and Mamakan; nor have we mastered that of Zeya. Isn't it time that we learned to have a businesslike attitude not only toward the ruble but also to the large human potential? At one time the Zeyskaya GES was planned only to "feed" the Transsib in its eastern section. Now it provides electric power to many consumers. In line is not only the Transsib but also the BAM, which is being built boldly and precipitously, as well as plants in Komsomol'sk-na-Amur, Khabarovsk, and Primor'ye. The Bureyskaya Cascade requires particular attention; its electric power will become the base for the Far East's further industrial development.

"I have come to see you on a personal matter"--that's the way the departing specialists usually begin their conversation.... No, these matters are not personal. Within approximately one year the group at Bureya will have to grow three- or fourfold. And whom will we draw upon for this? People come to me, who really do not wish to leave the construction projects in the Far East, not with personal reasons but with state reasons. And accordingly we must give them an answer.

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## ELECTRIC POWER

### IZHORSK PLANT IN LENINGRAD RENOVATED

Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 80 p 1

*[Excerpt]* During the present five-year plan the four-time order-winning Izhorsk Plant underwent a transformation. One of the oldest enterprises of Leningrad is now experiencing a second youth. Essentially not a single workshop remains on its territory which has not been affected by the modernization. Many new facilities have also been built and put into operation.

The plant's renovation is linked with the solution of the most important problem in the development of electric-power engineering--the building of AES's (nuclear electric power stations). The Izhorsk machine builders have become the suppliers of basic equipment for them. Here is the geography of AES's where units with the trademark "IZ" are in operation--Beloyarskaya and Bilibinskaya, Kol'skaya and Armysanskaya, Kurskaya and Chernobyl'skaya, Leningradskaya and Novovoronezhskaya, "Nord" in the GDR, "Kozloduy" in Bulgaria, "Bogunice" in Czechoslovakia, and others.

The scope of the modernization and technical retooling of the "Izhorsk Plant" Production Association is testified to by the following data. The Izhorsk workers, together with builders from Trust No. 35 of Glavzapstroy, and with the participation of several Leningrad enterprises and organizations, since the beginning of the five-year plan conducted an enormous amount of work with regard to the technical retooling of production and expanding the plant. Some 100,000 square meters of new production areas were put into operation. The total capital investments amounted to about 300 million rubles. The building of a number of workshops equipped with highly productive equipment is continuing.

The production of electric-power equipment has doubled since the beginning of the five-year plan. This association has completely outfitted 16 units of nuclear electric power stations with a total capacity of 10.8 million kilowatts. In particular, equipment was manufactured ahead of schedule for the third and fourth units of the Leningradskaya AES imeni V. I. Lenin.

During the course of the modernization at the enterprise a great deal was done and is being done with regard to mechanizing and automating the technological processes, especially on the metallurgical and welding production lines. Now, when high-grade steel is being smelted, application is being made, in addition to the ordinary vacuum chambers, of special installations for extra-furnace vacuuming with magnetic agitation, heavy-duty furnaces with vacuum-arc and electric-slag smelting, approximately 40 automated welding stands, special-purpose chambers for radioscopy with accelerators having 15 million electron-volts.

This association has created within a brief time period not only a very large production base for nuclear machine building, but it has also trained numerous staffs of outstanding specialists in nuclear-power machine building. This is the result of the care shown by the Leningrad Oblast Party organization for the development of nuclear-power engineering.

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## ELECTRIC POWER

### BENEFITS FROM CONSTRUCTION OF ZEYSKAYA GES DESCRIBED

Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 80 p 16

[Article by A. Malyy, correspondent: "On the Zeya Mountain River"]

[Text] As translated from the language of the ancient Evenki, the word "zeya" means "cutting edge" or "blade." And indeed the stormy course of this mountain river, which feeds an enormous number of small rivers and streams during the monsoons and periods of melting snow on the peaks of the Stanovoy Mountain Range, did not use to meet any obstacles. There were repeated floods. There were years when the capricious Zeya inflicted damage in the Amurskaya Oblast, calculated in the tens of millions of rubles. But now floods on the Zeya will no longer bring any misfortune to people.

When it reached the 115-meter mark, the dam formed a large reservoir. Today this man-made sea exceeds the average annual flow by a factor of 1.5 and allows us to carry out a thoroughgoing, multi-year redistribution of it and thereby exclude the probability of flooding throughout the entire river valley below the line of direction of the hydraulic development.

"Formerly push-boats with rafts used to go very slowly," recalls Aleksander Nikolayevich Suchkov, senior dispatcher of the Zeya river port. "And if they ran aground on a sandbar, that meant they had to wait for days for the water to rise.

Operating now on the reservoir are up-to-date lake and maritime vessels, thanks to which the way has been opened to hitherto inaccessible places, where abundant forest massifs are concentrated. Because of the lack of roads, lumbering operations were previously carried out only in the river valleys. The emergence of a new transportation main line and the creation of timber management farms have broadened the lumbering front in the depths of the taiga and has already allowed us to bring out more than 500,000 cubic meters of wood.

Thus, the hydroelectric power station on the Zeya has solved several problems. One of the main ones, of course, is to provide cheap electric power for the developing economy of the Far East. The Zeyskaya GES had

already begun to produce current even at the stage of construction when the reservoir was only one-third full. This is explained by the fact that diagonal-type turbines were installed for the first time at the Zeya. The first unit was put into operation in 1975. This was followed by the installation and start-up of four more units, which were able to produce more than eight billion kilowatt-hours during the five-year plan.

High-voltage electric-power transmission lines proceed in various directions from the Zeyskaya GES across the bald mountains. This vanguard of Far Eastern hydroelectric power engineering already feeds many enterprises in the Amurskaya Oblast, the Khabarovskiy Kray, and the Primorskiy Kray. One line strides to the north, to Tynda, and from there--to Khatanga. The LEP (electric-power transmission line)-220 for another section of the BAM is being laid out. For the first time in the Far East the LEP-500 has been put into operation from Zeya to Svobodnyy.

At the end of June, six months ahead of the deadline envisioned by the socialist obligations, the last and sixth unit was put under industrial load. The capacity of the Zeyskaya GES has reached its planned level and amounts to 1.3 million kilowatts.

In congratulating the builders, fitters, operators, planners, and machine-builders of the Zeyskaya GES, Leonid Il'ich Brezhnev wrote as follows: "It is gratifying to note, that the Zeya hydraulic development has come to occupy a worthy place in the glorious constellation of Soviet hydroelectric power stations, thanks to its multiplicity of purposes and its successful embodiment of several new technical solutions."

From the earliest days of the conquest of the Zeya the engineering thought of the builders, planners, and operating personnel was directed at increasing efficiency, speeding up the pace of operations, and providing effective operational and technically-well grounded solutions to the problems which arose. Let me cite a few of them.

For the first time in the world practice of hydraulic power engineering construction they began to introduce a special additive to the concrete; this allowed them to obtain a high-grade, frost-resistant concrete without using crushed-rock, only gravel.

In close, creative cooperation between the construction engineers and the planners, a change was made in the scheme of the turbine water conduits leading to the first two units, which allowed the temporary water conduits to be abandoned and subsequently converted into permanent ones. The special-purpose, diagonal-type hydraulic turbine was installed and put into operation within very short time periods.

A total of 40 innovative proposals were utilized in the process of creating this vanguard of hydroelectric power engineering on the Zeya; these allowed 40 million rubles of savings to be made, in comparison with the estimated cost.

At the Zeya an experienced group of builders was formed, the nucleus of which was comprised of people who had come to the eastern part of the country from the Bratskaya GES and the Mamakanskaya GES. One of them was Ivan Ivanovich Yevseyev. He had become a hydroelectric power station builder in Bratsk. Here the work of this brigade leader was marked by the Order of Lenin. This brigade leader was the first among the Zeya builders to be awarded the high title of Hero of Socialist labor.

Kolesnikov, Boris Leonidovich--a driver at the motor pool, who has already fulfilled his personal five-year plan, Kulesh, Nikolay Frantsevich--a former link leader in I. Yevseyev's brigade, now a brigade leader in the construction of the Bureyskaya GES, Nosulenko, Vasilii Ivanovich--one of the best brigade leaders of the concrete workers in the administration of basic structures, now a brigade leader at the Bureya.

The labor biography of A. Platonov may serve as an example of creative labor. When the first unit was being prepared for start-up, he led the brigade of millwrights. A. Platonov's brigade completed the assembly of the turbine's working wheel in half the time provided for by the schedule. And in the installation of all five remaining units this group worked outstandingly. A. Platonov is now working as a section foreman.

Young people are also working alongside of the construction-project veterans. Grigoriy Chepurnoy--a link leader from I. Yevseyev's brigade--came to the construction project on a Komsomol travel pass from Moldavia and here became an excellent specialist in building hydroelectric power stations. He has been awarded the high title of Laureate of the Lenin Komsomol Prize. One of the best is the Komsomol--Youth Brigade of L. Drozdov.

Among the many thousands of persons within the collective of builders a competition was organized among the brigades and the individual builders. A stubborn rivalry developed for the right to be a participant in the introduction of the sixth unit of this GES. The following emerged as the winners: the groups of the administration of mechanized operations, the central repair and machine shops, Section No. 4 of the SMU (Construction and Installation Administration) of Basic Structures, the brigade of millwrights from the LEP-220 construction brigade of A. Neponnyashchikh, G. Fedoryak's crew from the motor pool, and S. Ovchinkin's Komsomol--Youth Brigade. The winners were awarded honorary certificates and monetary bonuses.

Experience combined with a creative attitude towards the job also guaranteed the victory of the builders at Zeya. This is their worthy gift to the forthcoming 26th Congress of our Party.

Along with the construction of this special-purpose hydraulic development, a modern city was created in the taiga, with well-arranged houses, as well as the necessary complex of cultural and municipal enterprises. During



the years of construction almost 168,000 square meters of usable living space (23,500 above the plan level) was put into operation.

All this cannot fail to be a source of joy. But there are also other facts. And, unfortunately, they have to do with the construction of the electric network.

By the beginning of July on the Tynda--Priseysk section network construction and installation operations had been fulfilled by only 54.4 percent, on the Zeyakaya GES--Priseysk section--by 87.4 percent. There has been a sharp reduction in the construction of the VL-500-kW Zeyakaya GES--Khabarovsk line. The plan for the first half-year has been fulfilled by only 27 percent. The "Glavvostokelektroset'stoy" Trust must step up its operations so that more electric power from the new GES may be furnished to industrial enterprises, kolkhozes, and sovkhoses.

There is also another, no less important problem. Specialists of the Blagoveshchensk Ichthyological Laboratory of the Amur Section of TINRO (Pacific Ocean Scientific Research Institute for Fisheries and Oceanography) have made the following calculations: within a short time the lake's fish reserves will reach 30--32,000 quintals of fish.

"An industry could begin during the following year," states V. Golovko, the laboratory's chief. "But we cannot find an interested manager, who would not only take fish from the lake but would concern himself with their reproduction."

When the reservoir fills up completely, the spawning grounds will, unfortunately, disappear, and unless the USSR Ministry of the Fish Industry adopts measures to organize a fishing combine, a reverse process will occur--the fish in the lake will die out. These problems require immediate solution.

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## ELECTRIC POWER

### USE OF MODELS AT SAYANO-SHUSHENSKAYA GES DESCRIBED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Aug 80 p 4

[Article by S. Sadoshenko, Krasnoyarskiy Kray correspondent: "Laboratory at the Dam"]

[Text] The custom-made laboratory for large-scale hydraulic research of the Siberian branch of the VNIi gidrotekhniki (All-Union Scientific Research Institute of Hydraulic Engineering) imeni B. Ye. Vedeneyev has begun testing models of a new variant of operational spillways of the Sayano-Shushenskaya GES.

"Attention! Co-workers of the laboratory take your places, others, step back from the unit to a safe distance," Valeriy Viktorovich Bukhanov, head of the hydraulics sector of the lower head, proclaimed over the loud-speaker system.

A button was pressed, toggle switches were thrown, and the entire mechanism went into action. On the dam of the Krasnoyarskaya GES a water gate opened, and a powerful stream of water passed through the water conduit, two meters in diameter, and rushed into the unit's header (supply tank), and from there--into the model. The roar of the falling water made it hard to hear people speak; the white waterfall raged behind the lights of the vacuum tank. Piezometers and pressure pulsation sensors began to operate. The tests had begun.

A modern hydroelectric power station is an extremely complex hydraulic engineering structure. Prior to handing over the blueprints to the builders for its construction, the planners must re-check and test everything several times. However, it is not always possible to construct a model, and, for example, such processes as aeration, air-intake, and cavitation, are subject only to approximate modelling. Scientists still cannot establish the dimensions of error, obtained in recalculating from the model to the natural size.

Of course, the ideal variant would be to test all structures in their natural size, but to do this it would be necessary to build along with the GES under construction yet another GES especially for research!

And scientists have noted one more characteristic. When you run tests on a model using water conduit water, you get certain results, whereas if you use river water you get some other results. Even the tiniest particles of silt and sand contained in the water exert an influence on the nature of the flow. Hence, the desire to approach as much as possible the natural sizes in the conditions for testing the model.

All these requirements have been happily combined in the country's unique laboratory of the Siberian Branch of the VNIIC named D. Ye. Vedeneyev, the housing of which stands right by the dam of the Krasnoyarskaya GES. Here the water is fed directly from the reservoir to the testing stands; moreover, the head may reach 30 meters, and the water discharge--60 cubic meters per second. How much closer to nature can you get! Models here can be tested in ratios of 1:10, or 1:5, while gates and gate chambers may even have a ratio of 1:2 of their natural size.

Work is now proceeding in the laboratory on an important topic. N. Yeliseyev, the laboratory's director states that the Leningrad Section of "Gidroproyekt" at first planned in all 11 spillways of the Sayano-Shushenskaya GES segmented gates at the outlet from the enclosed portion of the spillway. This plan suffered from certain defects. Then the planners proposed a new variant. This was a significantly better solution, providing about 6 million rubles in savings. Tests on models with a ratio of 1:50 and 1:25 of natural size in Leningrad and Moscow confirmed the calculations of the planners. Now it's up to us. If our model with a ratio of 1:12 also behaves the same way with the water of the Yenisey, the new variant of spillways will be adopted.

The waterfall roars and rumbles within the closeness of the model's metallic walls. Beautiful! But when the specialist looks at this turbulence of foam and water, he has entirely different thoughts. He is thinking about cavitation--the formation in the liquid stream of zones filled with tiny bubbles of air. These bubbles burst, and because of these micro-explosions destruction is caused not only to the concrete of which the spillways are made, but also to the extremely strong steel of the hydraulic turbine blades.

The new variant of the operational water spillway of the Sayano-Shushenskaya GES, wherein the individual sections will be faced with metal, has been planned so that cavitation will be converted from a foe into a friend. On the small models everything turned out splendidly; how will it work out on the big models?

Tests have begun in the unit, where the section of the spillway which will pass into the dam has been modelled. Then three models which reproduce the open part of the spillway will undergo testing in a unit mounted directly on the body of the dam of the Krasnoyarskaya GES. All this will allow a multifaceted analysis to be made of the complex characteristics of the falling water. And when in the following year the builders of the Sayano-Shushenskaya GES proceed to build the operational spillways, they will have reliable, well tested blueprints.

## ELECTRIC POWER

### BRIEFS

POWER UNITS FOR VOLGOGRAD--A month ahead of schedule the Volgoenergomontazh Trust in cooperation with workers from allied fields ensured the start-up of a boiler with a production capacity of 420 tons of steam per hour at the Volgogradskaya TETs-3 **/Heat and Electric Power Station/**. Two months earlier than the deadline an electric-power unit was commissioned as part of a turbine with a capacity of 160,000 kilowatts and a boiler with a capacity of 500 tons of steam per hour at the Nizhnekamskaya TETs-2. **/Text/ /Moscow STROITEL'NAYA GAZETA in Russian 18 Jun 80 p 1/ 2384**

ELECTRIC POWER BRIDGE--Krasnovodsk, Turkmen SSR--Construction work has begun on a high-voltage, electric-power transmission line in Krasnovodskaya Oblast. This electric-power bridge will stretch across the desert from Kizyl-Arvat to Koturdepe, where a heavy-duty compressor station is located for pumping gas over into the main line from Central Asia to the Central Industrial Region. The installation of the electric-power transmission lines will have to be carried out under complex conditions. In the Karakuma area now--and the line will cut through the desert from East to West--the temperature gets up to 45° C. However, the builders have determined to significantly shorten the time periods for installing the towers so that electric power can be delivered more rapidly from the Maryyskaya GRES **/State Regional Electric Power Station/**. **/Text/ /Moscow IZVESTIYA in Russian 16 Jul 80 p 1/ 2384**

NOVOKUZNETSK TETs--Novokuznetsk--**/The Kuzbasenergostroy Trust builders have proceeded to modernize the Novokuznetskaya TETs. This station's capacity will be doubled./ /In boldface/** At the same time construction work is proceeding on two residential districts for 7,000 inhabitants, as well as cultural-municipal facilities for the TETs workers. The builders must utilize 154 million rubles. **/Text/ /Moscow STROITEL'NAYA GAZETA 4 Jul 80, p 2/ 2384**

GRES-2 FOR EKIBASTUZ--Ekibastuz--**/Work has begun on the foundation pit for the 400-meter smokestack of the Ekibastuzskaya GRES-2./ /In boldface/** The first shovelful of dirt has been dug by the leading excavator-operator, A. Bukhalov. Like the **/station 1/**, which is also under construction, this station

will consist of eight units with turbines having a capacity of 500,000 kilowatts each. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 4 Jul 80 p 2] 2384

GET PRIPYAT' AES ON SCHEDULE --Pripyat'--/In Pripyat', a town consisting of the electric-power engineers and builders of the Chernobyl'skaya Nuclear Electric Power Station, a meeting was held of the party aktiv of Kievskaya Oblast, at which they discussed the state of affairs in the construction of this station. / [in boldface] The speakers noted with particular alarm that in 5 months construction and installation work on the third power unit had fallen short of fulfillment by almost 9.7 million rubles. The meeting unanimously resolved to eliminate the lag in the shortest possible time period. The following persons took part in the meeting of the party aktiv: the chief of the nuclear electric-power engineering sector of the CPSU Central Committee, V. Mar'in, the chief of the electric-power stations sector of the Communist Party of the Ukraine Central Committee, V. Tkach, deputy minister of power and electrification of the USSR, V. Budenny, minister of power and electrification of the Ukraine, A. Makukhin, as well as other party, Soviet, and economic workers. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 6 Jul 80 p 2] 2384

COMPLEX FOR SAYANA-SHUSHENSKAYA GES--Leningrad--The Elektroapparat Leningrad Association has manufactured and delivered to its client a generator complex for the Sayano-Shushenskaya GES. Its use will allow the areas and volumes of stationary installations to be cut back. Specialists have calculated that the introduction of the new equipment will permit a million rubles to be saved. [Text] [Moscow IZVESTIYA in Russian 8 Jul 80 p 2] 2384

CHIRKEYSKAYA GES--The Chirkeyskaya GES (Dagestan ASSR) has turned out 10 billion kilowatt-hours of electric power from the moment the first unit was started up in 1974. Two more hydraulic developments are being erected on the Sulak River with a total capacity of more than a million kilowatts. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 30, Jul 80 p 3] 2384

CEMA CONSTRUCTION PROJECT--Ust'-Ilmsk--The Ust'-Ilmsk Section of the Vostokenergomontazh Trust has fulfilled its assignment for the 10th Five-Year Plan. Its group has worked on the projects of the Ust'-Ilmsk Lumber Industry Complex--CEMA construction projects. This year the new Siberian giant must provide a basic output--bleached pulp. The Section's workers have decided to produce before the end of the year construction and installation work amounting to five million rubles' worth. Earlier the main power unit of the Ust'-Ilmsk TETs was put into operation within a brief period of time. Moreover, the millwrights created favorable conditions for the builders to work during the winter months. Subsequently, the Section's group, increasing the complex's electric-power capacity, introduced two more power units, necessary to start up the pulp mill. Now going forward successfully is the installation of the fourth unit and its preparation for



testing. Many brigades, having engaged in overtime labor shifts in honor of the 26th Congress of the CPSU, have demonstrated models of high labor productivity. But the situation at the construction project is being complicated by delays in the delivery of a number of types of equipment. As reported in the production section of the Vostokenergmontazh, the Barnaul Boiler Plant did not fulfil its pledge to ship out a boiler for the fifth power unit of the TETs during the first ten days of July. The assembly area did not receive 25 tons of so-called screen surfaces. The Nizhnevskiy and Southern-Urals Plants for the production of metal structural components failed to deliver the following items: some 102 tons of framework components, the second--some 80 tons of flooring components. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 80 p 3] 2384

ELECTRIC POWER FOR BAM--Yanchukan, Buryat ASSR, 21 Jul (TASS)--Electric power from the Ust'-Ilimskaya GES has arrived at the construction site of the Severomysk Tunnel, which is being built on the Western Section of the BAM. Here, a year before the deadline, a LEP-220 (electric-power transmission line) from Severobaykal'sk to Severomysk was placed under industrial load. It extends for more than 300 kilometers, through the taiga and swamps, as well as through mountain passes. [Text] [Moscow PRAVDA in Russian 22 Jul 80 p 2] 2384

KOSTROMSKAYA GRES TURBOGENERATOR--Recently set into motion was the multi-ton shaft of the custom-built turbogenerator with a capacity of 1,200,000 kilowatts, mounted at the Kostromskaya GRES. The first test has begun of the unit's readiness to produce electric current. Then the "operational testing" of the turbine will begin. By the end of the year this power unit will provide industrial current. [Text] [Moscow PRAVDA in Russian 23 Jul 80 p 2] 2384

NEW RAILROAD SIDINGS--/We have received the following answer from the deputy minister of power and electrification of the USSR, V. Lukin, to the article "Who Will Throw the Switches?" (Daily, No. 13)/ [in boldface]: The article noted unfinished parts on the railroad sidings of the Arkhangel'skaya TETs, the Severodvinskaya TETs-1 and TETs-2 of Arkhenergo. In accordance with the title list coordinated with the Ministry of Transport Construction for the current year, the sidings of the Severodvinskaya TETs-2 will be completed during the third quarter. After these operations have been completed, the sidings will be put into operation by the directors of the electric power stations with subsequent turnover to the Ministry of Railways. The siding of the Severodvinskaya TETs-1 was put into permanent operation on 1 April of this year. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 80 p 22] 2384

MOSCOW TETs No. 25--TETs [Heat and Electric Power Station/ No. 25 is the newest one in the capital. Here the third power unit has been put into operation. The station's electrical capacity has been tripled, while its heating capacity has been increased by 330,000 kilocalories per hour. From here hot water is supplied to more than half a million Muscovites. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 80 p 3] 2384

NEW POWER EQUIPMENT--/Almost half of the electric power used by Karelia's enterprises is produced by the five electric power stations of the Vygskaya GES cascade. Put into operation a few days ago was the new Ondskaya GES--Petrozavodsk 300-kilometer electric-power transmission line with a voltage of 330 kilovolts./ **In boldface** The electric-power engineers have successfully mastered the equipment of the new 330-kilovolt sub-station, as well as the most up-to-date means of relay protection and automation. Work is being conducted on modernizing this cascade's hydraulic generators. Specialists from Lenenergomont, headed by the engineers Yu. Ageyev and D. Kornev, came to the aid of the local electric-power engineers. Karelia's hydroelectric power stations became a unique work area for these repair specialists; here for the first time new technical solutions were tested out in practice. In modernizing the hydraulic generator at the Matkoshnenskaya GES they had to replace the stator winding. "We had difficulties and misgivings," states D. Kornev. But now all our worries are behind us. The hydraulic generator of the Matkoshnenskaya GES is operating reliably. Our first experiment in repairing it by using up-to-date materials yielded positive results. We estimate that it will be widely used at other GES's throughout the country. These new materials considerably prolong the service life not only of the stator but also of the hydraulic generator as a whole. Now the brigade is effecting a major "cure" on the hydraulic generator at the Ondskaya GES. Modernizing the rotor and the turbine runner will increase the generator's capacity and improve its reliability. **[Excerpts]** /Moscow IZVESTIYA in Russian 30 Mar 80 p 1/ 2384

CSC: 1822

## FUELS

### EUROPEAN USSR FAR NORTH VIEWED AS FUTURE OIL EXTRACTION CENTER

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 2 Aug 80 p 3

[Article: "Our Nation's 'Big Oil'"]

[Text] The oil day starts at 6 a.m. out at the drill site. Three hours later, the main computer center of the Ministry of the Petroleum Industry USSR begins receiving data on the drilling of wells and the extraction and delivery of oil. Here is the summary report for 31 July 1980: 1,655,738 tons of oil and gas condensate were extracted that day in our nation.

Is that a lot or a little? If we compare that with what was extracted on the very same day 5 years ago the differences would be 311,000 tons more.

Over the 4 years of the 10th Five-Year Plan, extraction of oil and gas condensate has increased by 95 million tons, with our nation receiving 68 million tons more of "black gold" than it got during the entire 9th Five-Year Plan. Such an increase in oil extraction is one of the most decisive factors in the effective expansion of our economy.

Baku is the cradle of our domestic oil industry. This oil-producing region is more than 100 years old. During the Great Patriotic War there came to its assistance our "Second Baku"—our oil workers opened up the Uralo-Povol'zhye fields. Now, our oil center has been shifted beyond the Ural Mountain Range, out to the expanses of Western Siberia. Within this tremendous territory geologists have discovered about 300 oil and gas deposits. It is from this region today that we are getting all of the additional fuel being extracted in our nation.

The big oil of Siberia is obtained with a great deal of difficulty. The oil fields being worked have complex climatic conditions and are far removed from production bases and industrial centers. They are located almost on the shore of the Arctic Ocean and in the permafrost zone. And, naturally, just some local producers alone would be insufficient for getting out the wealth of this underground deposit. Our nation's big oil is a matter for all of our Soviet people. Now working in Western Siberia are representatives of almost all of the nationalities and people of our Motherland. For example, "flying brigades" of drillers and oil workers from Tatarsiya and Bashkiriya, Belorussia and the Ukraine, Saratov and Baku are now working side by side with the oil workers of Tyumen' and Tomsk. It is through their combined efforts that over the past 4 years 25.4 million tons of oil and gas condensate were extracted over and above the amount called for in the five-year plan.

Two years ago, Siberian oil workers reported that they had reached the 1 billion ton mark in the amount of fuel extracted since work was begun in the region. In July of this year, this level was attained by the "Nizhnevartovskneftegaz" Association.

Our European North is also discovering its own new deposits. The "Koineft'" Association has increased its extraction 2.6 times in the course of this five-year plan, mainly through assimilation of its Northern fields in Usinsk and Vozeyak. Our geologists assert that the Far North of the European portion of the USSR shows promise as an oil-bearing region and that it will become, in the near future, the new oil extraction center.

Resources of the old oil regions are far from being exhausted. For example, on 4 July of this year, workers of the "Bashneft'" Association also reached the 1 billion ton mark. It was gotten out of the ground with no less difficulty than in the Far North: the reserves of the main fields in the area of the Volga and the Urals are gradually being exhausted and methods for the forced extraction of oil have had to be introduced while small deposits are having to be exploited. Despite that fact, the oil workers of Bashkiriya have maintained their oil extraction level at 40 million tons over all of the years of this five-year plan.

Yes, we have not heard the last from our oil fields in the old regions. There, a large program for increasing the amount of oil extracted from strata has been instituted. And the oil wells which we think of as waning are being worked with new force: 90 percent of all oil produced in our nation today is being extracted with the aid of new, progressive methods, thanks to artificial action on productive oil-bearing strata.

Accelerated development of our petroleum industry during the 10th Five-Year Plan Period will play an important role in improving our nation's fuel-energy balance. This ever-increasing extraction of oil will faithfully serve the cause of improving the effectiveness of domestic production and the expansion of our productive forces. Thanks to the truly selfless work of our oil workers, our resources of oil will never become scanty.

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## FUELS

### PROBLEMS OF COAL INDUSTRY DISCUSSED

#### Report on Kemerovo Meeting

Moscow PRAVDA in Russian 24 Jul 80 p 3

[Report of a conversation on fuels by PRAVDA correspondent A. Bogachuk: "To the Deep Seams"]

[Text] Conservation of fuel and energy on into the future will be an important, over-all state task, as was noted at the November (1979) Plenum of the CPSU Central Committee. The efforts of every collective, every worker must be aimed at saving fuel and energy. The story of how this party mandate is being fulfilled is told by participants in business meetings arranged by the editors of PRAVDA and the Kemerovo Oblast Party Committee.

Workers and activists of people's control agencies and specialists of Kuzbass enterprises stated that the "upper stratum"--the struggle against loss of fuel and energy in production--has already been won to a significant degree. Now, basic reserves of the economy are the improvement of technological processes, introduction of scientific achievements, and equipment modernization. How are these "deep strata" being applied?

"At coal mines of the Kuzbass Basin," Chairman V. Ro of the Leninsk-Kuznetsk City People's Control Committee told us, "it has long been a practice to leave entire "pillars" of coal intact in order to keep underground work moving along. In doing this, tens of thousands of tons of fuel are irreparably lost in the depths of the earth. In cooperation with scientists, miners and specialists at enterprises of the Leninsk Coal Mine a so-called random technology for the extraction of coal was developed and introduced. Since the beginning of the 10th Five-Year Plan, over 1 million tons of fuel have been additionally extracted by dint of the curtailment of operational losses."

Important work as to improvement of technology and the creation of highly-productive and economic units for the hydraulic mining of fuel is being conducted in departments and laboratories of the All-Union Scientific Research Institute of Hydraulic Coal Mining. The institute's people's control group Chairman V. Mikhaylets informed participants at a meeting, looks out constantly for fulfillment of a complex plan of scientific research and design-construction work. During the past several years alone more than 10 working models of modern equipment have been created. These



include vacuum devices for sucking up coal, machinery for the combined extraction of coal, and complexes for the high-pressure cutting of coal. Their introduction holds promise for a significant increase in labor productivity, for a reduction of losses, and for a decrease in the expenditure of energy connected with coal extraction.

The experience of the collective of workers at the "Sibir'" Central Coal Concentration Factory is testimony to the effective creative ties between Science and production.

"Together with scientists from the Kuzbass Scientific Research Coal Concentration Institute, the Voroshilovgrad Affiliate of the State Design Institute for Coal Industry Automation, and the Moscow Institute for the Concentration of Solid Fossil Fuel Minerals," watch group member and factory chief power specialist V. Kuttsar informed us, "We introduced an automated system for the concentration of coal in heavy substances, applied new admixtures and flotation agents, and realized over 20 proposals. Introduction of these innovations enabled us to improve concentration of technology and to get a State mark of quality for our production. Over the 4 years of the present five-year plan, we saved 8 million k.w.h. of electricity and 11,000 tons of fuel and, by dint of reducing losses, provided an additional 300,000 tons of concentrate to be turned into coke."

Large reserves for the concentration of fuel-energy resources, as is demonstrated by the experience of the Tom'-Usinsk and the Belovo GRES and the Kemerovo Coke-Chemical Plant, can be uncovered through the reconstruction of production. Thus, the modernization of individual units at one of the oldest power stations in the Siberian system, the Tom'-Usinsk GRES, as was told to us by Deputy Watch Group Chairman L. Polunosik, helped us shift the station over to the partial use of low-quality gaseous coal and the combined production of electrical and heat energy, all of which provided us with considerable savings. At the Belovo GRES, we obtained the best results among one-type power stations in our industrial branch as to the expenditure of fuel for the production of 1 k.w.h. of electricity.

"Metallurgists of the Zapadno-Sibirskiy Plant," Chairman V. Rafinov of the People's Control Committee stated, in sharing his impressions with us, "Think that one of the chief reserves in fuel conservation is the effective use of secondary sources of energy--heat escaping from blast furnaces, steel-casting converters and batteries of coke ovens. Over one-half of all our requirements for steam and hot water is met by these secondary energy resources."

The people who took part in these meetings with us, you understand, mentioned energy reserves also. This involved, first of all, highly-productive use of mining equipment, improvement of electrical supply systems of enterprises and sectors, particularly in the coal industry and in construction, where large losses of energy in power systems are tolerated. It also involves reducing the idle time of trucks and empty runs in motor transport, a shift over to automated work systems for steam rooms and adapter devices in the construction industry.

One of the people who talked to us was Secretary V. Sitnikov of the Kemerovo Obkom, who is chairman of the oblast staff for conservation of fuel-energy resources. In summing up the results of these meetings, he said:

"Over the 4 years of the present five-year plan, workers in the oblast saved about 1 billion k.w.h. of electricity and over 500,000 tons of fuel, plus 1.8 million gigacalories of heat. The work experience of our oblast party organization in the conservation of fuel-energy resources has received the approval of the CPSU Central Committee."

It is fully understandable why representatives of those enterprises from whom we have something to learn were invited to meet people's controllers and why the conversation was mainly about success achieved. But that does not mean that we are satisfied with what we have accomplished.

"First of all, we did not succeed in bringing order in the organization of record keeping on the expenditure of electricity in shops and sectors. This makes it possible for managers who are remiss to hide behind the backs of their neighbors; it does not allow us to ask specific questions of them and, with all severity, to demand of them an explanation for losses on this or that sector. The record-keeping situation is not any better when it comes to the expenditure of technological water, heat and steam. It seems to me that the Ministry of Instrument Making, Automation Equipment, and Control Systems should think that it is time to bring order into the series production of proper control-measurement apparatus.

"We are not just sitting around with our arms folded. At the instruction of the oblast party committee, scientists and design workers of the Kuzbass Scientific Research Coal Institute and the VostNII [expansion unknown] created an instrument to record use of electricity at a coal-mine head. An explosion-proof meter has been tested successfully and has received high marks from miners. Series production of such a meter is being proposed for the Prokop'yevsk Mine Automation Equipment Plant. For more than a year, however, mine workers and an interdepartmental commission have been unable to agree upon technical specifications for the manufacture of so necessary an instrument.

"Persistently and correctly, people's controllers and economic managers have raised the issue about establishing technically-based standards for the expenditure of fuel and electricity. Ministries and governmental departments, however, set expenditure coefficients more frequently than not on the basis of the amount of goods produced, proceeding from the level which has been achieved. This places those collectives which concern themselves with conservation at a disadvantage and many reserves, naturally, have already been used up. At the very same time, the directors of other enterprises feel that they are free to do anything. Thus, the Izhmorskiy Sand and Gravel Quarry last year used up less than one-half of an increased electricity limit established in conformity with norms set by the USSR Ministry of the Construction Materials Industry.

"We would like to emphasize here that the shift over to the use of 'reserves in depth' through improvement of technology and enterprise reconstruction, which participants in our talks mentioned most frequently, requires very careful design processing at our industrial branch institutes, plus the seeking out of more progressive equipment and means of automation. For example, what we need for the more complete extraction of fuel from the earth is an expansion in the delivery of OKP-70 type mechanized complexes, and the re-working of so-called depleted coal deposits in open-pit mines. This cannot be done without the effective aid of the Ministry of the Coal Industry USSR.

"It must be admitted that not always do people's control committees and groups at enterprise manifest militancy and persistence in blocking the loss of electrical and heat energy. Thus, the 'Azot' Association gets condensed steam to meet its technological needs. 120,000 gigacalories of heat per year is lost by so doing. At the very same time, a unit for the chemical purification of water has been built for the association at a cost of 5.5 million rubles. It is only being used at one-half its capacity. At the 'Butovskaya' Mine of the 'Kuzbassugol' Association, because of out-dated electric supply systems, the loss of energy in the systems and the mine's transformer unit exceeds 1 million k.w.h. per year. For seven years now, a new power substation has been under construction there. The building is already beginning to fall apart.

"Of special significance for our oblast is the rational use of secondary energy resources. Every percentage point saved is equal to 11,000 tons of fuel conserved per year. And if, let us say, the Zapadno-Sibirskiy Plant uses over 90 percent of its secondary resources, and the Kuznetsk Metallurgical Combine uses only one-third of its secondary resources, our chemical enterprises use, on the average, slightly less than one-half their secondary energy resources. Many units only serve to 'heat the sky' while, at the very same time, thousands of tons of fuel are expended for the production of technological steam and hot water.

Now there is a sphere for application of the force of the people's controllers! We have every hope that committees, groups, and watch posts, in making use of the experience which has been accumulated within our oblast, will do their best in aiding reduce to a minimum the loss of our fuel-energy resources."

#### Coal Transport Problems

Moscow PRAVDA in Russian 4 Aug 80 p 2

[Article by L. Reznikov, general director of the Kemerovougol' Association: "Who Pays the Forfeit"]

[Text] I recall that, 4 years ago, there was a sharp increase in the flow of complaints both to the association and to the State Arbitration Commission, these involving failure to receive full railroad car fuel deliveries. First to sound the alarm was our legal staff--for what we were talking about here was the fulfillment of contracts with enterprises which were using millions of tons of coal mined by us. What we did was to draw into the resolution of this problem people from both our production department and our loading-transport administration. An analysis of the situation permitted us to uncover the reasons behind the failure to fully load railroad cars. As a result, we improved our weighing facility, took steps to improve our rolling stock and the organization of the loading operation system. This I must frankly confess: the weakening of contract discipline which we had allowed cost the association a great deal of money. Nonproductive expenditures, these tied in first of all with the payment of fines and penalties, doubled in 1977 in comparison with the past. The amount exceeded 3 million rubles. I am not speaking here of waste and loss of profits caused enterprises to whom we deliver coal.

In carrying out measures called for by the decree of the CPSU Central Committee and the Council of Ministers USSR on improvement of our economic mechanism, what



became significant was the precise regulation of the functions of production subunits and their day-by-day reciprocal activities. With the aid of our legal staff, the association has worked out regulations as to its departments plus instructions as to the duties of officials. These documents are directed toward the strengthening of plan, contract and labor discipline, at increasing the responsibility of subunit leaders and of rank-and-file workers.

In practice, the efficacy of contracts depends, as we know, on the organization of a proper system for the control and verification of their fulfillment. Let me make this comment, by the way; we are still a long way from a precise and timely fulfillment of our obligations as to the delivery of fuel to consumers. There are, of course, purely objective reasons which delay the on-schedule shipment of coal to electric power stations and to plants. However, we must not close our eyes to facts indicating a lack of organization, to out-and-out negligence of individual directors, and to weak control over the fulfillment of obligations. When we see these shortcomings we will take the necessary measures for their elimination as quickly as possible. Along with an intensification of control over schedules for delivery of fuel to consumers, the association and enterprises have organized commissions within them for decreasing nonproductive expenditures. What we have gotten started is a struggle to do everything possible to cut down the number of fines and penalties. A very careful analysis is made of the internal reasons which give rise to these types of sanctions. In so doing, we do not limit ourselves to disciplinary measures; means of material influence are also applied against those people responsible for causing losses. For example, instances of considerable short-weight coal shipments were uncovered at the "Tomusinskiy" Open-Pit Mine. Some practical aid and effective control over the work of the enterprise facilitated the rapid improvement of matters at that mine.

This year, nonproductive expenditures as a whole for the association were reduced by one-fourth, which allowed us to save about 800,000 rubles. To a significant degree, this was the result of the efforts of our legal staff. This is the place to note that the "Kemerovougol'" Production Association is the most profitable component within the Ministry of the Coal Industry USSR. For this five-year plan period, we figure on giving the government 500,000 million rubles in profits and to extract 3.5 million tons of high-quality coal over and above plan.

On our agenda today is the expansion and deepening of calculations within our economic organization. The association consists of dozens of extractive and auxiliary enterprises, open-pit mines, loading-transport administrations, motor vehicle bases, and repair plants. There has been introduced at each of them a system of calculations for services rendered and of individual calculations for sectors and shops. All of this is dedicated to just one purpose: to eliminate internal conditions and causes of economic transgression, to strengthen responsibility for fulfillment of contractual obligations, and to eliminate instances of the violation of those obligations.

"Kemerovougol'" ships about 44 million tons of coal to its consumers every year. There is no need to say that the delivery of that coal on schedule to plants, electric power stations, and new construction projects depends not only upon our miners but upon our railroad workers also. There is room for improvement in our business relations with them. Here are the facts. In just the first half of this year

alone, we have exacted 4.4 million rubles in fines from the railroads for failure to provide us with railroad cars. The situation, as you can see, is patently unsatisfactory and it cropped up a long time ago. In 1978, we got 86,000 fewer railroad cars than were called for by plan. As a result of this, we were unable to deliver almost 2 million tons of coal to our customers. At the very same time, by the end of the year in our warehouses were about 3 million tons of unsold fuel, also expected by our consumers.

You must understand that these fines extracted from railroads can not in any way make up for our true losses, which are borne by our association and our enterprise-consumers. Our miners also suffer materially as the result of our failure to fulfill obligations. We think that the normative document which spells out our mutual relations needs reviewing. Under these conditions, what we propose, this in the sense of a temporary measure, is to take a portion of these fines received by our coal miners and to add it to our material incentive fund.

There is yet another problem. We are concerned about a reduction of funds every year for spare parts for excavators, diesel locomotives, bulldozers and other costly equipment. Even these unsatisfactory funds are not fully supplied to us. Thus, the Izhorak Plant from which we get excavators and the spare parts for them fails to fulfill its obligations year by year, is late in delivering them to us and even then does not deliver the amount it should. Often, these machine builders prefer paying a forfeit--it takes no effort on their part to do so and the amount of money which is extracted from them for the undelivered spare parts can be measured in kopecks. Perhaps we need here to speak of improving our grievance-claim procedure and our legal recourse against these errant suppliers. At any rate, other measures are required. Probably, there is some sense to the idea in having the State Arbitration Commission, when it seeks to invoke this forfeit, to designate a schedule for fulfillment of that forfeit by payment in kind. In the event that such a decision is not fulfilled, it should then impose a monetary penalty upon the specific culprits who are guilty of disrupting the delivery of spare parts and components and make such action highly unprofitable for them.

The law in our nation protects state and public interests. Further improvement in the role played by law in the national economy is an important prerequisite for a high quality of work and for an upsurge in the effectiveness of social production.

#### Conditions of Gondola Cars

Moscow GUDOK in Russian 23 Jul 80 p 1

[Article by A. Kobelev, chief of the railroad car department: "Under the Coal--a High Quality Empty"]

[Text] A request for coal goes hand in hand with a request for gondola cars. Our Kemerovo Railroad Line, for example, requires several thousand of those cars per day. But what we need we do not have, because we get many cars which are not in proper working order among those sent to us on the regulated routes which bring us empty cars. Over a 6-month period, we got 106,000 of them from the West Siberian railroad, 33,000 from the South Urals Road, and 10,000 each from the Sverdlovsk and Kuybyshev railroads. Often, the empty car which we get has to be set aside for repair instead of being loaded with coal. So, let us say that, on 16 July, a



chain of 67 gondola cars arrived in Prokop'yevsk from Pavlodar; out of that entire train, only one car was fit for loading. At their local repair yards, the railroad people fixed up 35 of them; the remaining 31 had to be sent off for maintenance. Some gondola cars lacked side doors, while there was damage to stanchions and king-pin bars on others.

Over the past 6 months, the Kemerovo station got 246,000 gondola cars which were not in proper working order. Up to 700 such cars arrived every day at 36 repair points, but only 620-650 of them were repaired. For the time being, our repair base is not in a position to repair all "sick" cars; often, we had to send empty rolling stock off to the East, despite the bad shortage of them in the Kuzbass. On our railroad line we have 13 "Donbass" repair cars which have been in operation over 10 years. These cars are pretty well worn out but their locomotion mechanism and welding devices are still functioning. Each one of those repair cars is supposed to place 50-60 rolling stock units back in working order every day. Knowing how difficult the situation is, we have set the level at 30 but only 20-21 gondola cars actually get fixed each day.

In order to cope with the plan for the hauling of Kuznets coal, our Kemerovo railroad car people have tried to strengthen the repair bases at our preparatory and detached repair points, to improve material-technical supply, and to improve the organization of labor. Confronting our railroad car workers is a task which they cannot put off—to reduce by at least 1 hour the idle time for empty cars being repaired. To that end, a number of our detached repair points have been placed on a 24 hour work schedule. Thanks to the measures which were taken, 2.1 percent more cars were fully repaired over the past 6 months than were fixed during the same period last year. In June, for example, this meant that we had an additional 1,366 gondola cars available to us, enabling us to ship out an additional 100,000 tons of coal.

Following the 8 July collegium meeting at the USSR Railways Ministry, there was a solid stream of empty cars which descended upon our Kemerovo station. The hauling of coal and the buildup of winter reserves now depends upon how quickly we can get those cars fixed. The majority of our Kemerovo railroad people work very hard. At the Obnorskaya Station, for example, empty cars these days are loaded in 1 hour 40 minutes under a 3 hour norm. Here, more than 450 rolling stock units are handled. An improvement in the organization of labor, activization of competitions in honor of Railroad Worker's Day, and material stimulation have had their effect here.

Following the changeover to three shifts in Mezhdurechensk, the coal-car loading point began handling 1.5 times more cars per day. A sharp advance in work also took place at the Trudovarmeyeskaya Station—four times as many gondola cars undergo maintenance there than were handled at the beginning of the month.

In the near future, we plan to place "Donbass" repair cars into operation at three coal-loading stations. At the fourth station, we plan to set up a welding line and to open a car-repair point for the stations of Southern Kuzbass. A decision has been made to hire an additional 250 workers and to introduce a system of material stimulation for the quickest handling of empty cars, this in connection with the repair and cleaning of rolling stock. We think that the carrying out of these measures will permit us to increase our work volumes, improve repair quality, and cut down on the idle time for gondola cars at preparation points.

We must take into consideration, however, that in order to achieve the goals set for us, what is required is a sharp improvement in material-technical supply. Despite the fact that our expenditure norms were reviewed this year and an increase decided upon, the funds allocated to us are not enough. We are constantly encountering a great deal of difficulty because of the absence of lumber, metal, and such units and components as automatic couplers, connecting hose, and brake shoes. The railroad needs urgent aid in the procurement of new equipment, particularly the "Donbass" repair cars.

The workers of our railroad's car division understand the importance of the task on the creation of fuel reserves for the coming winter and will apply all their efforts for the successful fulfillment of this responsible assignment. They will strive to fill the plan for this, the last year of our five-year plan as to the hauling of coal, and will meet the 26th Party Congress with new labor successes.

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## FUELS

### FAILURE TO PLACE TOBOL'SK PETROCHEMICAL COMBINE INTO OPERATION IS DISCUSSED

Moscow PRAVDA in Russian 20 Aug 80 p 2

[Article by PRAVDA Correspondent V. Lisin: "Tobol'sk Bottleneck"]

[Excerpts] Close to Shain 20 years ago there burst forth the first powerful gusher of oil, an event which opened a new page in the history of Siberia. Over that period of time, our nation's main fuel and power base was formed out of these forest wilds and muddy swamps. It is from this area that our nation gets every second ton of oil and every third cubic meter of natural gas produced in our country.

But this is only the first stage in the creation of a gigantic energetics potential. An oil processing industry is gathering force beyond the Urals. Party documents have commented repeatedly on the need to move on to the next stage in our program for the complete exploitation of our mineral resources.

Construction in Nizhnevartovsk of the first enterprises for the processing of gas encountered in our extraction of oil can be looked upon as the beginning of this new stage. There have now been created in Tyumenskaya Oblast an entire network of these gas-processing plants.

However, despite the fact that the Ministry for Construction of Petroleum and Gas Industry Enterprises USSR has learned to erect these installations quickly and well, not everything here is all right. For the fact is that the processing of this gas lags very far behind the increase in the extraction of oil--about 5 years, on the average. Right now, even at Samotlor, that most developed of fields, if you will, the level of utilization of gas derived from oil is only 70 percent. On the whole, more gas is burned off in the oblast than is being utilized.

What recourse do we have? Why, the creation of a petrochemical combine, whose preparatory shops are, in essence, gas processing plants. This is exactly the way that the Tobol'sk Petrochemical Combine was conceived.

...from the highlands of Tobol'sk, "the first city of Siberia," where unique monuments to the past are located, the road leads down to the unexplored expanse of the Irtysh River. Here is the industrial heart of Tobol'sk and its alluring future--an enterprise the likes of which has probably never been seen before, either within our nation or abroad. When it is placed into operation, the production of synthetic rubber in our nation will increase sharply. The raw material being burned off into the atmosphere in the Ob' River area is to be converted, here in

Tobol'sk, into automobile tires, industrial rubber products, modern construction materials, film, mineral fertilizer, paints, and consumer goods.

Things are difficult for the combine. Its construction was begun on what is virtually a bare spot. The city had only one construction administration and this with an annual work volume of less than 3 million rubles. That was why the main task of that initial period was the creation of a strong construction organization. The main contractor, the Ministry of Industrial Construction USSR, set up four trusts here, while the chief subcontractor, the USSR Ministry of Installation and Special Construction Work, created an entire main administration in that city on the Irtysh.

Matters in Tobol'sk came to a head: in 1974, 3.5 million rubles in capital investment funds were spent. In 1975, it was 35 million, in 1976 it was 58 million, and in 1977 it was 63 million. Suddenly, this increase stopped. The construction project began to bog down.

Why? Gosstroy USSR experts, when they reviewed the combine technical project years back, when extraction of the fuel was significantly lower in volume, came to the conclusion that there would only be enough raw material available to keep its productive capacity at 60 percent until 1990. That is why the proposal was made to eliminate something from the first section of the combine during the first stage of construction; instead of two central gas distillation units (TSGFU), only one such unit was to be placed into operation.

Siberian scientists and production specialists expressed their categorical disagreement with such a decision. It was convincingly demonstrated, this at a scientific-practical conference on the subject of "the Tobol'sk Petrochemical Combine in the System of New Chemical Complexes of Siberia," that there was a surplus of hydrocarbon raw material in Western Siberia. Moreover, without that second central gas distillation unit at Tobol'sk, the nation's needs for raw material to be used in the production of polymer products could not be satisfied, beginning with the second half of the 11th Five-Year Plan.

In short, the combine was needed in Tobol'sk, as they say, as of yesterday. However, the rock had been dropped into the water and the waves spread to a countless number of echelons. As a result, the combine, which was to have dispatched its first 100 tons of unstabilized gasoline to processing plants in 1979 and to begin shipping semi-finished polymer products in 1981, has not as yet emerged from the construction base creation stage.

...We spent a great deal of time covering the tremendous area of the future combine in the company of Tobol'sk Gorkom First Secretary V. Chertishchev. At not a single installation did we see the proper type of determined work going on. There were things going on, but it was in matter of fact fashion.

Accounts and financial documents confirm this not at all comforting picture. Their eyes fixed on the main contractor, the subcontracting organizations have begun to look askance at Tobol'sk. The USSR Power Ministry is not even bothering to build a TETS, which is absolutely necessary to the combine and to the city. The USSR Ministry of Transport Construction has begun to draw off people and equipment for



other installations without completing the laying down of railroad lines. The RSFSR Ministry of the Construction Materials Industry has begun to "freeze" construction of a ceramic wall materials plant....

"The Gorkom has adopted measures aimed at enlivening work on the construction project," V. Chertishchev said. "However, we do not encounter any understanding at all governmental departments. This applies first of all to the Ministry of Industrial Construction USSR."

Construction organizations in Tobol'sk have been placed in a fairly good position. The construction industry base which they usually must create for themselves is being put together with money and materials furnished by the people who ordered the combine to be built. But the general contractor for the combine--"Tobolpromstroy" under the Main Administration for Industrial Construction in Tyumenskaya Oblast--could not even complete this assignment on schedule. Just at this point, when this construction base capable of absorbing 200 million rubles in capital investment funds per year is entering its pre-acceptance stage, the association has thought up a new "hitch": let the people who want the combine pay for the people whom we have on our staff. While this correspondence-squabble is going on, time is being lost.

"Tobolpromstroy" Association Chief A. El'bert was clearly reluctant to agree to a meeting with this correspondent. We spent over an hour talking to him, with only this single entry made in our notebook: "It is indeed a great art to talk a great deal but to say nothing." So, I left without getting any answer to this question: why is the association so stubborn in its refusal to intensify work volume?

It was only when I had gotten to the door that I heard this: "Now, if the combine were producing an end product, that would be a different matter. Even if that were so, you are not going to be able to ship out whatever you get from here: the railroads are already overloaded...."

What was it: a ruse or a justification for reticence, or an unfounded conclusion? An All-Union Conference on the Expansion of the Productive Forces of Siberia held recently in Novosibirsk refuted the conclusions of El'bert. As a result of placing the first section of the combine into operation, we will be getting monomers, which is raw material for our petrochemical industry. This is a product which is very much needed. The release of an end product--that is also included in the long-range plans for expansion of the combine.

Well, the railroad in the northern part of the oblast is indeed overloaded. This is so, even without any reference to the combine. Construction of this petrochemical giant in Tobol'sk is but another argument in favor of an accelerated expansion of the railroad trunkline.

At one of the recent oblast meetings of party activists, A. Voznesenskiy, Chief of the Main Administration for Industrial Construction in Tyumenskaya Oblast, publicly declared:

"We are not building the Tobol'sk Combine, of course, as we should. However, the 'Tobol'promstrom' Association is coping with its plans, both as to the rubles which



it has been given to spend on construction and as to gross valuation of production."

It is too bad that the meeting of party activists did not come up with an evaluation, based on principle, of such an attitude and did not demand of party members who are heads of main administrations that they fulfill designated plans for placing installations into operation. The position taken by the people who ordered the combine--the "Soyuzkauchuk" Production Association of the Petroleum Refining and Petrochemical Industry USSR--deserved a rebuke, inasmuch as it was that association which was content to do nothing about the disruption as to placing this very important installation into operation. The 320 million rubles invested in Tobol'sk today hang in the air like a dead weight.

The nation's largest territorial-production complex is being put together in Western Siberia. Once the Tobol'sk Petrochemical Combine is placed into operation, the region will acquire an even greater significance for state economics. It is necessary that Gosplan USSR be more precise in defining the role and place of the combine in our national economic system, that ministries and oblast party organizations review their attitude towards these more important construction projects and that they create all conditions necessary for accelerating the tempo of work on them and for placing this productive capacity into use as quickly as possible.

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## FUELS

### GOR'KIY COMPRESSOR PLANT BEING LET DOWN BY ITS PLANT-SUPPLIERS

Moscow IZVESTIYA in Russian 23 May 80 p 2

[Article by IZVESTIYA Special Correspondent A. Yershov: "An Honorable Task"]

[Excerpts] The Gor'kiy "Dvigatel' Revolyutsii" Plant specializes in diesel engines and gas-driven compressors. Its products are in great demand, particularly by oil and drilling workers and by geologists. The collective of this very old enterprise strives to fill all orders for the regions of Western Siberia and the Far East quickly and with high quality. The powerful diesel engines manufactured by the plant provide electricity for the more remote oil fields which, because of swamps and thickets, cannot be supplied with regular industrial electric power lines.

These gas-driven compressors are most reliable and up to date pumping stations and they have been installed on the large gas trunk lines. In addition, the gas-driven compressors are used in the oil fields to pump gas into strata in the extraction of fuel, as well as in the creation of underground gas storage sites. That is why these Gor'kiy gas-driven compressors use cheap gas directly from the pipeline as fuel. All this allows use of these units under the most difficult conditions and makes them very economical to operate.

These gas-driven compressors have been in series production for a number of years now. Special building number 14 was built for their manufacture by the enterprise. The building is equipped with modern, highly-productive equipment and production lines. The over-all area of the building is more than 40,000 square meters. It is truly a plant within a plant. Concentrated in it is the manufacture of the more voluminous base components. The building is equipped with high precision modern boring, planing, and boring-turning lathes, as well as with processing focal points. In the process of coping with the series production of gas-driven compressors, over 600 types of equipment are manufactured and installed here.

"Recently, our design people have developed several modifications to our gas-driven compressors," Plant Deputy Director for Production V. Skachkov told us. "Preparation are now under way for production of even more powerful units for the oil fields. In short, we are striving to provide our workers out in Siberia with most modern and highly-productive equipment. This year, we delivered 2 powerful 7,500-hp units for gas trunklines, equipment which is being installed at the Konchurinskaya Compressor Station in Bashkiriya. Installation of powerful gas-driven compressors in Yakutiya, Tomsk, and on Sakhalin have been completed ahead of schedule.

During the 4 months of this year, our Gor'kiy machinebuilders delivered about 20 powerful gas-driven compressors and diesel engines to regions of Western Siberia and the Far East.

All of the plant's subdepartments and services are operating precisely and smoothly, with the contribution made by the work collective in building number 14 being a particularly substantial one. Over 200 people work there. Comparing the 4 months of this year with those of last year, there has been a 34 percent increase in production. Recently, the collective has occasion to warmly congratulate the brigade of planing lathe operators led by A. Korolev on their completion of five-year plan assignments ahead of schedule. The brigade of planing lathe operators led by N. Lychagin, the brigade of drilling lathe operators led by V. Buryakovskiy, and many others are doing excellent work in fulfilling orders of honor from our workers in Siberia.

The collective is increasing production of items in short supply at an accelerated pace. A specialized section for this purpose has been created; there, new and productive machine tools have been installed. The payment system has been improved and has been tied in directly with our end product. This has, we must say, led to an increase in technological discipline and has reduced spoilage. Quite a few reserves are being uncovered through improved technology. Reliability of many sub-assemblies and units will be increased with the production of components made out of highly-stable cast iron.

Our Gor'kiy machinebuilders are striving, this year, to increase production of diesels and to cover their old indebtedness. Last year, for various reasons, the plan for the production of diesels at the enterprise was allowed to lag. The task of overcoming this lag is now being raised.

However, quite a bit of difficulty is being encountered by the Gor'kiy diesel builders, mainly due to the lack of sufficient castings. Because of this reason, the plant is operating without the necessary stockpile; all of the engine parts, some of them weighing 10 tons, are fed into the production line, as they say, right off the railroad car delivering them. A steady rhythm in the provision of ready-made parts is not always maintained, which leads to fitful work and to wastage. We need to speak, first of all, about the unsatisfactory work of our suppliers, the Pervomaysk Machinebuilding Plant imeni 25th October (located in Nikolayevskaya Oblast) and the Leningrad "Russkiy Dizel" Plant. These enterprises are only supplying our workers in Gor'kiy with approximately one-half the castings they need.

We should not remain silent on this question. When construction of the Borskiy Casting Complex, with a capacity of 25,000 tons a year, was begun, it was to provide our diesel builders in Gor'kiy with billets or bars. It was estimated that the complex would cost 55 million rubles to build. Yet, since construction was started in 1974, only 4.1 million rubles of that over-all amount have been used up. We should not allow construction of so important an installation to proceed at that tortoise-like pace. However, leaders of the Main Administration for Volga-Vyatka Construction [under the USSR Ministry of Construction] seem to be unconcerned about expanding the capacity of local construction organizations. Right now, for example, fulfillment of the plan for this installation is proceeding at about the 30 percent level.

The Gor'kiy Plant's allies are working unsatisfactorily. They are being let down badly by the Penza Diesel Plant, which was supposed to provide turbocompressors for diesel engines and gas-driven compressors. At one point, a schedule for the delivery by Penza of the necessary sets of equipment to Gor'kiy was approved at a meeting held in the office of Ye. Matveyev, Deputy Minister of Heavy and Transport Machine Building USSR. This schedule is not being maintained; our people in Gor'kiy have not gotten a single turbocompressor from its plant-ally. Urgent measures must now be taken in order to correct the situation. Our machinebuilders in Gor'kiy are fully resolved to increase their labor contribution to our national cause of assimilating the wealth of Western Siberia and of the Far East.

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